1029-44 Elevated Plasma Angiotensin-Converting Enzyme Levels Are Associated With Myocardial Infarction in Young Subjects Without Risk Factors, Independently of Coronary Artery Disease, and of Insertion/Deletion Gene Polymorphism

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Elevated plasma angiotensin-converting enzyme (ACE) levels, and D/D ACE genotype have been proposed as risk-factors for myocardial infarction (MI). Of 1150 patients (p) with MI and no ACE-inhibitor treatment undergoing coronary arteriography in our center during 24 months, 20 p *[Group A]* were < = 40 year-old and had no conventional risk factors (CRF) for MI [smoke, hypertension, diabetes, body mass index > 26 Kg/m2, Apo B > 1.25 g/L, Lp (a) > 20 g/L, fibrinogen > 300 g/L]; 30 p *[Group B]* were < = 40 year-old and had 1 or > CRF. Basal plasma ACE levels were measured with a quantitative kinetic determination using FAPGG substrate. Amplification by polymerase chain reaction was used in the determination of ACE genotype. Mean (+ – SD) plasma ACE levels, and I/D genotype were as follows (percentages in brackets):

	No.	ACE(U/L)	D/D	I/D	I/I
Group A	20	30 ± 13#	8 (40)	8 (40)	4 (20)
Group B	30	19 ± 11#	10 (33)	11 (37)	9 (30)

#p = 0.002; 95% c.i. 0.85 to 12

A normal coronary angiogram (no stenosis > 20% with Quantitative Coronary Angiography) was found in 16/20 p in group A vs. none in group B. *In conclusion:* young p with MI and no CRF seem to have higher plasma ACE levels than p with CRF. Coronary artery stenoses are often absent at angiography in these patients. No significant predominance of the D/D genotype was observed in this limited population sample. The renin-angiotensin system may contribute to the risk of myocardial infarction, with no apparent effect on the development of coronary atherosclerosis.

1030 Acute Myocardial Infarction

Wednesday, March 27, 1996, 3:00 p.m.–5:00 p.m.
Orange County Convention Center, Hall E
Presentation Hour: 4:00 p.m.–5:00 p.m.

1030-45 Threatening or Manifest Reocclusion of the Infarct Artery in Acute Myocardial Infarction Treated With Primary PTCA: Outcome After Prolonged Autoperfusionballoon Catheter Treatment ≥ 30 Minutes

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Reocclusion after initially successful reperfusion of the infarct-related coronary artery (IRA) in acute myocardial infarction (AMI) induces a nearly threefold increase of in-hospital mortality compared to patients (pts) with open vessels. *The aim of this study was to evaluate the impact of prolonged* autoperfusionballoon catheter (APBC) inflation of the IRA on acute and late (19 ± 11 *months) outcome used in case of threatening/manifest reocclusion* following severe dissuction of a reperfused vessel. *Study population and characteristics:* From 12/89 to 10/94 309 pts were treated with primary PTCA in AMI within 12 hours of symptom onset. 35 pts.(11.3%) suffered threatening (TIMI II) or manifest (TIMI 0/1) reocclusion after initially successful (TIMI III) IRA recanalisation.

Age (years)	Male (pts)	CS (%)	CABG‡	Prior (%) MI*	MVD† (%)	Time onset of pain to recanalisation
58 ± 11	32	11	6	26	40	202 ± 90 min.

‡coronary artery bypass grafting. CS = cardiogenic shock; *MI = myocardial infarction; †MVD = multivessel disease

In 52% threatening/manifest reocclusion occured in the right coronary artery [p = 0.326]. APBC used was larger in diameter compared to the standard balloon (p = 0.0001), APBC inflation pressure lower (p = 0.0001) and APBC inflation time longer (mean 35 min.) [p = 0.0001].

Results (%):

TIMI III-flow (IRA)	Stents*	30 day reocclusion	30 day mortality	EF§ (%)	late restenosis	late mortality
94.3	5.7	2.9	5.8**	+10	30.8	0

*coronary stents after APBC-failure; **pts in CS on admission; §EF = left ventricular ejection fraction [increase during follow up (*p = 0.001*)];

Conclusions: Prolonged inflation with an APBC is a safe and successful treatment of threatening or manifest reocclusion of the IRA. Improvement of EF is significant and restenosis rate is comparable to those in elective PTCA. APBC technique seems to be a preferable approach to manage bailout situations during primary PTCA.

1030-46 Complementary Beneficial Effect of Early and Late Treatment With ACE-Inhibitors in Acute Myocardial Infarction. A Model Based on GISSI-3 and AIRE Results

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Several studies documented the beneficial effect of ACE-inhibitors (ACE-i) in pts with acute myocardial infarction (AMI). However, selection of pts and timing of ACE-i treatment are still debated. We quantified the beneficial effect of (a) an early (within 24 hr) use of ACE-i in hemodynamically stable pts (b) a late use of ACE-inhibitors in selected pts and (c) combination of these approaches, in 4 different types of pts with AMI depending on absence or presence of symptoms of cardiac dysfunction at entry (Killip class > 1) and during evolving AMI (CHF+). Actual data on effect of ACE-i were derived from GISSI-3 and AIRE studies. The mean time of enrollment of pts in AIRE (5 days) was taken as cut-off between early (0–5 days) and late (5 days-onward) *treatment. The calculated beneficial effect of ACE-i on 6 months* mortality is as follows

Clinical status of pt	At entry ↓ in-hospital	Killip 1 ↓ CHF–	Killip 1 ↓ CHF+	Killip > 1 ↓ CHF–	Killip > 1 ↓ CHF+
% of AMI pts randomized within 24 hrs*		74%	8.5%	5%	9%
Lives saved	Early*	4	4	12	12
at 6 months/	Late**	—	21	—	21
1000 pts	Early + Late	4	25	12	33

*data derived from GISSI-3, **data derived from AIRE

In conclusion, data from a model based on large clinical trials indicate that an early treatment with ACE-i of all hemodynamically stable pts with acute MI followed by a late targeted treatment of pts with symptoms of congestive heart failure is able to maximize the benefit of ACE-i in pts with evolving MI.

1030-47 Is Thrombolytic Therapy Underused in Women With Acute Myocardial Infarction in Clinical Practice?

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Recent reports have called attention to differences in the therapeutic approach of physicians to men and women with acute myocardial infarction (AMI). We evaluate the sex-specific characteristics of these patients and the influence of gender on daily clinical treatment of AMI.

Methods: "The 60-Minutes Myocardial Infarction Project" is a multicenter nationwide study of current treatment of AMI which includes 136 hospitals in Germany. During a 27-month period 14 980 patients with proven transmural AMI were enrolled and lysis rate (LR), prehospital delay, absolute and relative contraindications to thrombolysis and the diagnostic accuracy of the electrocardiogram upon admission were studied.

Results:

	Men (n = 10 209)	Women (n = 4 771)
Age (mean/yr)	62	71*
Lysis rate (%)	56	42*
Prehospital delay (median/h)	2.6	3.5*
Contraindications (%)	22	23
Diagnostic ECG (%)	72	71

*p < 0.05

A multivariate analysis of 15 factors associated with indication to thrombolysis showed that female sex was an independent predictor of a lower LR (Odds ratio: 0.8; 95%-confidence interval: 0.7–0.9).